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CLASSIFICATION CHANGED  
 TO *Restricted*  
 AUTH *AR 30-5482 DT*  
*B9 PC*  
 DATE *A-3-21-46*

CLASSIFICATION CANCELLED  
 AUTH: *RR Dec 1948*  
 BY: *09*  
 DATE: *1/11/49*

WAR DEPARTMENT  
AIR CORPS, MATERIEL DIVISION

MEMORANDUM REPORT ON

Pursuit Single Engine (P-40B), A.C. No. 40-362

Date July 21, 1941

SUBJECT: Acceptance Performance Tests

SECTION: Plying Branch

Contract No. W-535 AC-12411

Expenditure Order No. 130-4-21

Purchase Order No. \_\_\_\_\_

SERIAL No. 140-M-19-1267-A

A. Purpose

- Report on flight tests conducted at the manufacturer's plant on Curtiss P-40B. Airplane equipped with Allison V-1710-39 engine and 3-bladed constant speed propeller, blade design No. 89301-3, blade angle range 24.5° to 54.5° at 42" radius. Gross weight as tested 7740 lbs., c.g. location, wheels up, 27.9% m.a.c.; wheels up; wing flaps neutral; radio antenna installed; prestone and oil cooler flaps flush with cowling in level flight, wide open in climb; four 50 cal. wing guns and uncovered blast tubes in place, except where otherwise stated.

B. Test results

- Level flight speed tests:

Altitude Ft.	True Speed MPH	R.P.M.	D.F.P.	Throttle Position
*5,175	326	3000	1150	Part
*15,175	354	3000	1085	Wide
15,175	335	2600	910	Wide
15,175	307.5	2280	725	Wide
15,175	290	2200	635	Part
15,175	265	2100	530	Part
15,175	239	1900	420	Part
15,175	209	1700	300	Part

\*Oil temperature does not meet Air Corps cooling requirements under these conditions.

- Fuel consumption wide open throttle at 15,175 ft. with mixture control in automatic lean position at 307.5 mph at 2280 rpm at 725 bhp was 321.5 lbs/hr (55.2 gals/hr at 6.0 lbs/gal). Endurance on 145 gals of fuel is 2.68 hrs., corresponding range 324 miles.

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- 3. The airplane tested was equipped with an experimental carburetor air intake scoop which had not been constructed to provide for hot air to the carburetor.
- 4. Climb data, mixture control in automatic rich position:

Altitude Ft.	True Speed MPH	R.P.M.	R.H.F.	Rate of Climb Ft/Min.	Time of Climb Min.
0	140	3000	1150	2580	0
5	151	3000	1150	2580	1.94
10,000	162	3000	1150	2580	3.88
12,850	168	3000	1080	2357	9.0
15,000	172.5	2600	840	1800	6.36
20,000	182	2600	690	1120	10.0
25,000	190.5	2600	560	635	15.9
S/C 30,000	199.5	2600	-	100	35.0
A/C 31,000	201	2600	-	0	-

- 5. Minimum recommended indicated airspeeds:

Wing Flaps	Indicated Airspeed MPH	Flight Condition
0	82	Take-off
15	75	Take-off
30	75	Take-off
Full	82	Landing
Full	110	Glide approach for landing

- 6. Determination of airspeed indicator and altimeter installation errors with wheels and flaps up. Barometric pressure at test level was 29.35" Hg. Airspeed static openings located 22" in from wing tip and 17" fore leading edge of wing.

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Indicated Airspeed MPH	Indicator		Airspeed		Altimeter	
	Water Column MPH	Vs. MPH	Calibrated Airspeed MPH	Installation Error MPH	Installation Error Ft.	
275	275	275	285	-10	-160	
250	250	250	259	-9	-130	
225	225	225	233	-8	-95	
175	175	175	181	-6	-40	
150	150	150	155	-5	-20	
130	130	130	134.5	-4.5	-10	

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